



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,815	12/19/2005	Masaaki Miyanaga	19036/41345	6677

4743 7590 07/17/2007  
MARSHALL, GERSTEIN & BORUN LLP  
233 S. WACKER DRIVE, SUITE 6300  
SEARS TOWER  
CHICAGO, IL 60606

EXAMINER

COLLINS, GIOVANNA M

ART UNIT	PAPER NUMBER
----------	--------------

3672

MAIL DATE	DELIVERY MODE
-----------	---------------

07/17/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/539,815

**Applicant(s)**

MIYANAGA, MASAOKI

**Examiner**

Giovanna M. Collins

**Art Unit**

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 May 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 3-5 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Taylor 2014955.

Referring to claim 3, Taylor discloses (fig. 2-3) a cutting portion structure of a core drill including a cylindrical core body (at 22); and cutting blades (at 10), the cutting portion structure comprising an opening end portion (where element 10 is located) formed on the cylindrical core body, the opening end portion having a tip end portion rounded in a semispherical shape (at 10) as viewed from a direction substantially perpendicular to a cross-section in a radial direction of the core body, wherein the cutting blades are formed at the opening end portion of the cylindrical core body and arranged in a circumferential direction of the core body to have gaps (21) between the cutting blades, and the cutting blades include diamond grains (10) bound on the opening end portion from an inner peripheral side of the core body to an outer peripheral side of the core body, wherein the opening end portion is partially expanded in the radial direction to have a thickness larger than a thickness of a base end side portion of the core body which is closer to a base end of the core body than the opening end portion is, and the expanded portion of the opening end portion is entirely rounded

Art Unit: 3672

as viewed from the direction substantially perpendicular to the cross-section in the radial direction, the cutting portion structure further comprising a step portion ( see inside of fig. 1 where expanded portion ends a step and interior of fig. 3) formed between the opening end portion and the base end side portion of the core body to form a right angle between the step portion and the base end side portion.

Referring to claims 4-5, Taylor discloses a gallet (curved groove leading to element 21) formed on a portion of a tip end portion of the core body which is located forward relative to the cutting blade in a rotational direction of the core drill such that the gallet is located adjacent the cutting blade to allow chips resulting from cutting to be discharged therethrough and the gallet is structured such that a bottom portion thereof is located radially inward relative to an outer peripheral face of the core body, and an upper end portion of the gallet forms a face continuous with a base end side portion of the core body which is located above the gallet.

Referring to claims 8-10, Taylor discloses (see fig. 1) a core drill comprising a cylindrical core body ( at 22) having a side wall terminating in an opening end, a radial cross-section through the opening end forming a semispherical tip end ( at 10), the tip end including a radially expanded part having a thickness than a thickness of the side wall (see inside of fig. 1 where expanded portion ends a step and interior of fig. 3) of the core body; a plurality of circumferentially spaced diamond grain cutting blades ( at 10) formed about the tip end to form gaps between adjacent cutting blades, the cutting blades bound on the opening end to extend from an inner peripheral side of the side wall to an outer peripheral side of the side wall; and the radially expanded part

terminating at a step formed by a right angle between the side wall and the radially expanded part ( see interior of fig. 1, at expanded portion and interior of fig. 3) and an upper portion of the cutting blades (10) terminate at the step.

3. Claims 8 and 10-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Henderson 3308896.

Referring to claim 8, Henderson discloses (see fig. 1) a core drill comprising: a cylindrical core body having a side wall (at 44) terminating in an opening end, a radial cross-section through the opening end forming a semispherical tip end ( at 54), the tip end including a radially expanded part having a thickness than a thickness of the side wall ( at 44) of the core body; a plurality of circumferentially spaced diamond grain cutting blades ( at 55) formed about the tip end to form gaps between adjacent cutting blades, the cutting blades bound on the opening end to extend from an inner peripheral side of the side wall to an outer peripheral side of the side wall; and the radially expanded part terminating at a step ( see at element F in fig. 1).

Referring to claim 10, Henderson discloses wherein an upper portion of the cutting blades terminate at the step ( see in fig. 1, at element F, cutting blades 55 terminate at step).

Referring to claim 11, Henderson discloses an upper portion of the cutting blades terminate above the step (see fig. 1, near element 52, cutting blades 55 terminate above the step at element F).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor 2014955 in view of Hampe et al. 3692127.

Referring to claims 6-7, Taylor does not disclose a protruding portion. Hampe teaches (fig. 1) a protruding portion formed in a spiral shape (spiral above element g) on an outer peripheral face of the side portion of the core body. This portion helps to evacuate cuttings. As it would be advantageous to have a mechanism to evacuate the cuttings, it would be obvious to one of ordinary skill in the art to modify the cutting portion disclosed by McAllister to have a protruding portion in view of the teachings of Hampe.

***Response to Arguments***

5. Applicant's arguments with respect to claims 3-11 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Art Unit: 3672

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Giovanna M. Collins whose telephone number is 571-272-7027. The examiner can normally be reached on 6:30-3 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3672

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*gme*  
gmc

  
**David Bagnell**  
**Supervisory Patent Examiner**  
**Technology Center 3670**